

WASTE CONTAINER ASSEMBLY AND MODULAR PRODUCT SYSTEM

Related Application Data

5 This patent is related to and claims the benefit of co-pending U.S. Provisional
patent application Serial Nos. 60/365,745, which was filed on March 19, 2002, and
60/339,929, which was filed on December 10, 2001.

Field of the Invention

10 The present invention is generally related to waste containers and modular
products, and more particularly to a modular product system that utilizes one or more
of a refuse container, a product dispensers, and a visual media display region.

Background of the Invention

15 Service stations, filling stations, and gas stations are all monikers used to
describe facilities where vehicles such as automobiles are refueled and often briefly
serviced, whether it be by the owner of the vehicle or by a station employee. Gas
stations are known to have multiple fuel pumps ready to service a number of
automobiles at the same time. Various products are often provided near the pumps
for the convenience of the vehicle operators, passengers, and other consumers using
20 the facility.

As an example, it is common to place one or more waste containers near the
fuel pumps so that refuse can easily be disposed of while servicing one's vehicle. It is
also typical to provide one or more containers adapted to hold window cleaner or,
more typically, windshield washing fluid, and squeegees for use to clean the windows
25 of a vehicle. It is becoming more common to also provide one or more additional
product dispensers near the fuel pumps to dispense other useful consumer products,
such as, for example, disposable towels for use by the vehicle owners. One might
often also see various signs or other visual media within the gas station environment
displaying information about gas prices, sale items within the gas station facility, or
30 even profit generating advertising material.

A number of devices and methods have been devised relating to such products
and product systems. For example, U.S. Patent Nos. 4,143,792, 4,759,470, and
5,709,005 disclose examples of windshield washing service units. Further, U.S.

Patent Nos. D274,570, D289,458, D393,510, D393,930, 3,309,160, 5,295,593, 4,948,004, and 4,598,838 disclose examples of waste containers.

Examples of display frames to hold such visual media or other information are disclosed in U.S. Patent Nos. 3,309,160; 3,793,756; 3,866,824; 5,772,063; 5,009,018; 5,947,584; 5,967,355; 6,076,694; and 6,176,388. Many of these patents use (a) a framework of vertical and horizontal channels and (b) a clear plastic sheet to cover and affix the advertising panels, and to protect them from the elements. In addition, U.S. Patent No. 3,866,824 discloses using a waste container cover that shields an advertising sheet or sign from rain and adverse weather conditions.

Brief Description of the Drawings

Gas station product systems and components are described herein in accordance with the teachings of the present invention and with the aid of the accompanying drawings, in which:

FIG. 1 is a perspective elevation viewed from a front left corner of one example of a waste container assembly constructed in accordance with the teachings of the present invention.

FIG. 2 is a perspective elevation viewed from a rear right corner of the waste container assembly shown in FIG. 1.

FIG. 3 is a right side view of the waste container assembly shown in FIG. 1.

FIG. 4 is a top view of the waste container assembly shown in FIG. 1.

FIG. 5 is a partially exploded view of the container assembly shown in FIG. 1.

FIG. 6 is a further exploded view of the shell and insert portions of the container assembly shown in FIG. 6

FIG. 7 is an enlarged fragmentary view on section of a portion of the container assembly taken along line 7-7 of FIG. 5.

FIGS. 8A and 8B illustrate perspective front and rear views, respectively, of a visual media display frame of the container assembly shown in FIG. 1.

FIG. 9A and 9B illustrate partial sectional views of the shell of the container assembly shown in FIG. 1 with and without a visual display frame installed, respectively.

FIG. 10 is a top view of one side wall of the container assembly shown in FIG. 1 and with the cover removed.

FIG. 11 is an enlarged perspective view of a portion of the container top end illustrating the visual media tracks and insertion space of a display frame.

5 FIG. 12 is a perspective view of the container assembly with visual media being inserted behind the display frame shown in FIG. 11.

FIG. 13 is a front view of the product dispenser unit of the container assembly shown in FIG. 1.

FIG. 14 is a back view of the product dispenser unit shown in FIG. 11.

10 FIG. 15 is a partial exploded view of a washer fluid bucket and the bezel of the unit shown in FIG. 13.

FIG. 16 is a view of the back panel and bezel of the unit shown in FIG. 13 and illustrating part of an alternative mounting arrangement.

15 **Detailed Description of the Preferred Embodiments**

The waste containers and product systems disclosed and described herein can include one or more of a waste or refuse container, a washer fluid bucket, a towel dispenser, and a visual media display region. Referring now to the drawings, FIGS.
20 1-4 illustrate a waste container assembly 20 that provides such a gas station product system constructed in accordance with the teachings of the present invention. In the example shown in FIG. 1, the waste container assembly 20 of this disclosed system supports a washer fluid bucket 22, a towel dispenser 24, and a plurality of visual media display regions 26. In this example, the bucket 22 and towel dispenser 24 are
25 carried by a product dispenser unit 28.

The container assembly 20 is adapted for placement on a generally horizontal surface in a gas station environment. In another example described below herein, a product system in accordance with the teachings of the present invention can alternatively include only a product dispenser unit 28 that carries, for example, the
30 washer fluid bucket 22 and the towel dispenser 24, and that is mounted to a pole or other vertically oriented surface within the gas station environment.

In the example illustrated in FIGS. 1-4, the container assembly 20 has an exterior shell 30 and a cover 32. The cover 32 has a refuse opening 34 in a cover top panel 36 for receiving refuse to be stored within the container assembly 20. The shell 30 in this example generally has four discrete side panels specifically identified herein as panels 38a, 38b, 38c, and 38d. The side panels 38a-d are also identified herein as side panels 38 when referred to generally.

As will be evident to those having ordinary skill in the art, the shell panels 38 in this example define a contiguous side wall 40 that forms a shell interior 41 (FIGS. 6 and 7). The side wall 40 need not include four discrete panels 38 as illustrated herein, but can instead vary in shape and construction as desired. The side wall can be a smooth, curved wall without discrete panels, such as a circular cylinder. Alternatively, the side wall 40 can include fewer or greater than four discrete panels.

The product dispenser unit 28 is attached to, though removable from, and generally covers a selected one of the side panels, which is illustrated as the side panel 38a in this example. A frame 42 for holding and supporting a visual media object is attached to, though removable from, each of the remaining side panels 38b, 38c, and 38d, in this example. The frames 42 and the unit 28 are described in greater detail below.

One aspect of the disclosed product system is to provide a refuse container for disposal and retention of waste. This aspect is described with general reference to FIGS. 1-7. To that end, the side panels 38 of the side wall 40 are interconnected at shell corners 44 to define a generally polygonal four sided shell, which in this example, is a somewhat rectangular cylinder. The disclosed side panels 38 are generally vertically oriented, though slightly angled, giving the shell a wider footprint at the bottom than at the top for stability, aesthetic appeal, and particular functional characteristics (described below). Further, the side panels 38 are somewhat, though not entirely, planar in this example. Portions of the side panels 38 in this example are generally concavely curved or contoured, also for aesthetic appeal and particular functional characteristics (described below).

However, as will be evident to those having ordinary skill in the art, the waste container assembly 20, including the shell 30, can have other shapes, sizes, and contours than that illustrated and described herein. The four sided generally

rectangular cylindrical shape shown herein is just one of many permissible symmetrical or asymmetrical shapes.

The example of the refuse container assembly 20 described above is further described with reference to FIGS. 5-7, which show exploded views and a partial section view of the container assembly 20. The shell 30 generally has an open shell top 50 defined by an upper end 52 of the side wall 40. The shell 30 also generally has an open shell bottom 54 (FIG. 7) defined by a lower end 56 of the side wall 40. The shell 30 rests on the side wall lower end 56.

A plurality of bag pinch regions 60 are provided in the upper end 52 of the side wall, one corresponding with each of the discrete side panels 38a-d. An upper end of each shell corner 44 defines an upward facing support surface or ledge 62. Each pinch region 60 is formed as a cutout in the upper end 52 of each respective panel 38 and positioned between respective corners 44 of the shell. Thus, the pinch regions 60 terminate at a lower elevation than the ledges 62. The pinch regions 60 and ledges 62 together define the upper end 52 of the side wall 40. The pinch regions 60 can be formed having a surface feature that protrudes slightly inward to the interior 41 of the shell 30, if desired, in order to assist in pinching or gripping a refuse bag as described below.

As shown in FIGS. 5-7, a substantially rigid container liner or insert 64 is received in the shell 30. The insert is considered to be substantially rigid, in that it can be made of plastic to provide some flexibility as needed, and yet retain its overall shape and structure, even when loaded with refuse. The insert 64 has a closed bottom end 65 (FIG. 7) and side panels 66a, 66b, 66c, and 66d, that define an insert side wall 67. In this example, the side panels 66a-d of the insert essentially mirror the corresponding side panels 38a-d when installed in the shell. The liner side wall 67 may have the same general shape as the shell side wall 40, regardless of the shell configuration, such as the generally rectangular cylinder as in this example, or can have a shape that is different from the shell, if desired.

The insert 64 also has an open insert top 68 and an annular outwardly projecting perimeter lip 70 extending around the insert top. The insert 64 is nested or received in the shell interior 41, and inserted through the open shell top 52. The insert 64 is installed in the shell 30 via the bottom end 65 first, so that the open insert top 68

lies generally in the top opening 52 of the shell when assembled. The lip 70 can rest on the ledges 62 at the shell corners 44 so that the liner or insert 64 may be fully or partly supported on the ledges within the shell interior 41. The height of the insert 64 can be such that the closed bottom end 65 lies just above or well above a surface on which the shell rests. In this way, the insert 64 will be fully supported by the ledge and lip. Alternatively, the insert bottom end 65 can rest partly or wholly on the surface on which the shell sits. In this way, the insert may be partly or fully supported only on the surface, as permitted by the insert height and the open shell bottom 54.

The size of the insert 64 in this example is preferably such that each of the insert side panels 66 physically contacts the corresponding side panel 38 of the shell, at least in the area of the pinch regions 60. The insert 64 can also be sized to create a slight interference fit between the respective side panels 38 and 66 to firmly hold the insert within the shell 30, if desired. As shown in FIG. 7, a liner bag 72 can be placed within the insert 64 with its top edge over the lip 70 and downward over a part of the exterior of the insert near its open top 68. The contact between the side panels 38 and 66 at the pinch regions pinches and holds the bag 72 in place. Clearly, the insert 64 can be utilized with or without a liner bag 72, as desired. Also, other means can be utilized to support or hold the bag in place. For example, as discussed above, the pinch regions 60 can project slightly inward toward the shell interior 41 to initiate contact between the insert 64 and shell 30 to pinch the bag 72.

As shown in FIGS. 1 and 5-7, the cover 32 is installed over and seated on, though removable from, the open shell top 50 and the open insert top 68. To accomplish the disclosed cover installation in this example, the cover 32 has a skirt 74 that depends from a perimeter of the cover top panel 36. The shell 30 is formed in this example having an outwardly protruding shelf 76 formed around a perimeter of the shell. The shelf 76 is positioned spaced downward from the ledge 62 and downward from the elevation of the pinch regions 60. When installed, the skirt 74 of the cover 32 telescopes over a top portion of the shell 30 such that a bottom edge 78 of the skirt 74 bears against the shelf 76. This positively registers the cover 32 over the shell 30.

As will be evident to those having ordinary skill in the art, the shelf 76 can be replaced by a plurality of discrete protrusions performing this same function..

Alternatively, the top panel 36 of the cover 32 can be designed to instead bear directly against the top end of the insert 64 or the shell 30 when installed. In the disclosed example, portions of the side panels 38 and the corners 44 that are disposed above the shelf 76 are inset or recessed slightly toward the shell interior relative to the remaining parts of the shell. This inherently assists in defining the shelf 76 and also permits the skirt 74 to be sized so that it provides a clean, smooth transition to the exposed shell portions when installed to enhance aesthetic appeal and the like.

The construction of the cover 32 can vary considerably from that shown and described herein. For example, the shape and contour of the cover can be different from that shown. The skirt 74 in the disclosed example is shaped to blend with the shell contour in this example, but does not need to be so shaped. The height of the cover and skirt can also vary.

Another aspect of the disclosed product system is to accommodate and display visual media, in one example, advertising material to exploit revenue generating opportunities. There has been a recent shift in a certain type of visual media, known as Point-Of-Purchase (POP) advertising. This type of visual media is becoming popular in many different environments. POP adds are often made from paper sheet with 2-color print to thin plastic sheet with 4-color print. Such adds can be displayed within a gas station environment to achieve a number of purposes. The disclosed product system is intended to accommodate these and other types of visual media displays.

Further, with the advent and growth of thin plastic sheet visual media, such media are suitable for outdoor use such as within a gas station environment. Use of POP advertising of this type can eliminate the requirement for a clear protective plastic cover sheet that is disposed over the media, as has been necessary with previous inventions of this type, as discussed briefly above. However, there is a need to more securely capture the thin plastic sheet material, when no plastic cover is utilized, to secure the sheet in place and to provide wind resistance.

Turning now to FIGS. 8A-12, one example of the frames 42 is illustrated and that is suited for supporting and holding a visual media sheet against the shell 30. In this example, the frame 42 is a rectangular-shaped ring having an upper horizontal segment 80, a lower horizontal segment 82, and a pair of vertically oriented side

segments 84. The segments 80, 82, and 84 are interconnected and arranged to define the generally rectangular frame shape in this example. However, as will be evident to those having ordinary skill in the art, other frame shapes and sizes can be utilized if desired.

5 Each of the side and lower segments 84 and 82, respectively, in this example is formed generally as a U-shaped channel. Each of these channels has one front or forward facing leg 86. Each segment channel also has a pair of legs 88a and 88b extending from edges of the leg 86 and generally perpendicular thereto. One of the legs 88a extends from an outer edge of the leg 86 and is positioned laterally outward
10 relative to the display region 26 of a side panel 38 when installed on the shell 30. The other of the legs 88b extends from an inner edge of the leg 86 and is positioned laterally inward toward the display region 26. In other words, the legs 88a and 88b are arranged somewhat perpendicular to the legs 86 and to the side panels 38 of the shell 30. The open end of the U-shape of the channels faces the shell 30.

15 In general, a sheet 90 (shown in FIG. 12) of material containing desired visual information (i.e. visual media) can be inserted within the frame 42, between the frame and the shell. However, the material sheet 90 can also be positively held therebetween, in any number of ways, as desired. A number of such means are disclosed herein and described below. In the disclosed example, and referring again
20 to FIGS. 8A and 8B, the lower frame segment 82 includes a plurality of protruding tabs 92 that depend downward from a portion of the leg 88a of the lower segment. As described below, the tabs 92 assist in mounting and holding the frames 42 in place on the container assembly 20. In the disclosed example, the tabs 92 extend from a rear facing edge 93 of the leg 88a that is adjacent the shell 30 when the frame 42 is
25 installed.

 Also in this example, the upper frame segment 80 has a flange 94 that extends upward from a rear facing edge of the upper most leg 88a of the segment. As described below, the flange 94 is captured by the cover 32 when installed on the shell 30 to further assist in mounting and holding the frames 42 in place. A pair of laterally
30 projecting ears 96 extend outwardly from opposite ends of the flange 94 and beyond the side segments 84. The ears 96 in this example are in the form of elongate tabs and are joined to the flange at a step 97 that positions the ears rearward toward the shell

relative to a plane of the flange 94, as shown in FIG. 10. The purpose of the step 97 is described below. As with the tabs 92, the ears 96 can also vary considerably from the illustrated construction. As described below, the ears also assist in mounting and holding the frames 42 in place on the container assembly 20.

5 The upper segment 80 of each frame 42 in this example is provided with a depression 100. The depression 100 merely provides finger clearance in order to assist one in gripping and removing the cover 32 from the container assembly 20.

10 Each frame 42 can be adapted to hold virtually any type of visual media desired. In one example, the sheet 90 is a POP advertisement made of a plastic material. In such an example, a viewing area 104 of the frame 42, defined within the frame segments, need not be covered to protect the sheet 90. In other examples, the frame may incorporate a transparent material (not shown) that is supported by the frame and that covers the entire viewing area 104. Such a transparent material can be used to cover the media or sheet 90 to protect it from the elements.

15 As best shown in FIGS. 9A and 9B, to accommodate the frames 42, each side panel 38a-d of the shell 30 includes a slightly recessed section 106 in each display region 26 that is interior to each panel perimeter. Each recessed section 106 is bound on three sides by a border surface formed in the side panels 38. The border surface is shaped to compliment one of the frames 42 in this example. The border surface is
20 arranged facing the recessed section 106 and at an angle thereto. In this example, the border surface is oriented somewhat perpendicular to the recessed section 106 surface and has a lower border 110 and a pair of side borders 112. When installed, the lower frame segment 82 and side segments 84 correspond with the like positioned borders 110 and 112, respectively.

25 The lower border 110 is provided with a plurality of tab receptacles or slots 114. A proper number of tab slots 114 are provided, each for receiving therein a corresponding one of the tabs 92 of the lower frame segment 82. A pair of ear slots 116 are formed in the side borders 112, and in this example, positioned vertically above the shelf 76 in the shell 30. When installed, the ears 96 are received in the ear
30 slots 116.

 The border surface of the recessed section 106 in each shell side panel 38 does not include an upper border in this example. Instead, the recessed section 106 surface

continues upward to the pinch region 60 in each side panel in roughly the same plane. However, when a frame 42 is installed in each recessed region 106, the outer leg 88a of the upper frame segment 80 defines a continuation of the shelf 76 across the recessed section 106 of the respective side panel 38 between the corners 44.

5 A frame 42 is installed, with the cover 32 removed from the shell 32. The tabs 92 and ears 96 are slid downward into the appropriate tab slots 114 and ear slots 116, respectively. Once installed, a visual media sheet 90 can be placed in the frame.

 With reference to FIGS. 11 and 12, a sheet receiving gap 118 is formed between the flange and the surface of the recessed section 106. The step 97 between
10 the flange 94 and the ears 96 creates this gap. In general, the gap permits insertion and removal of a sheet 90 from between the frame 42 and shell 30.

 The side segments 84 and bottom segment 82 of the frame 42 are constructed in this example to assist in grabbing and holding the sheet 90. The rear edges 93 of the outer legs 88a of the side segments 84 and lower segment 82 contact the recessed
15 section 106 surface when the frame is installed. The outer legs 88a thus define a confined area to hold the sheet 90.

 Rear edges 120 of the inner legs 88b of the side segments 84 and the lower segment 82 do not quite touch the recessed section 106 surface, because the legs 88b are slightly shorter than the outer legs 88a. The spacing between the rear edges 120
20 of the legs 88b and the recessed section 106 surface permits insertion of the sheet therebetween. This spacing can be designed to slightly pinch the sheet when installed. The side segments 84 thus define tracks that receive and guide sides of the sheet 90 into the frame.

 To further assist in inserting a sheet 90, an increase in the size of the gap 118
25 can be accomplished by pulling the flange 94 and the upper frame segment 80 slightly outward in the direction A (see FIG. 11). In the disclosed example, this is permitted by deflection of the ears 96. Thus, the gap 118 size can be increased when needed to install a thicker sheet 90. By doing so, the spacing between the legs 88b and the section 106 surface is increased nearer the top of the frame 42 as well permitting easy
30 insertion of the sheet 90.

 Once a sheet 90 is installed as shown in FIG. 12, the cover 32 is then replaced on the shell 30. The flange 94 is captured between the cover and the shell. The skirt

74 covers the flange 94 and closes or covers the gap 118, thus protecting the gap from the elements. To remove a frame and or replace a sheet 90, the reverse of the above steps can be performed.

5 Turning again to FIG. 10, a top cross section view of a side panel 38 of the shell and an installed frame 42 is shown. As can be seen, in this example, the upper and lower segments 80 and 82 of the frame 42 and the recessed region 106 in the side panel 38 are not planar, but instead are slightly curved concavely inward. Thus, when a sheet 90 is captured by the frame against the side panel, the sheet will also be concavely curved. This provides a number of advantages. For example, the edges of
10 the sheet 90 will apply a force outward to assist in holding the frame and sheet tightly against the shell to prevent wind chatter and the like. Also, the curvature adds rigidity to the sheet when installed. Further, this will assist in preventing wind from getting under the sheet 90 and thus prevents the sheet and frame 42 from being blown from the container assembly 20 during high winds. Also, the curved frame and sheet will
15 help to assure that a relatively thin sheet will not slide or otherwise easily come out of a display frame which has no clear plastic protective cover.

Current patents exist for 'crescent-shaped' document holders (US Patents 5,775,663 and 5,911,398, for example) that support sheets in upright positions. However, these are mainly for the purpose of word processing with desktop
20 computers. The application here is with larger sheets of indoor and outdoor advertising signs affixed to waste containers.

Turning now to FIGS. 13 and 14, front and rear views are shown of the product dispenser unit 28 illustrated in FIG. 1. The unit 28 disclosed herein has a bezel 130 that is contoured and sized to cover a selected one of the side panels 38 and
25 to aesthetically conform to the same. The unit 28 also has a back panel 132 secured to a rear part of the bezel 130. The back panel can be integrally formed as part of the bezel, or can be a discrete part attached to the bezel. The unit 28 carries each of the bucket 22 and the towel dispenser 24 in this example. The bezel 130 also includes a rearward extending annular flange 134.

30 The dispenser 24 can be held in the bezel in any number of ways. In the disclosed example, the flange 134 has a plurality of pin slots 136 formed therein. As shown in FIG. 14, the towel dispenser 24 has a pair of pins 138 extending outwardly

from the lower end. These pins 138 are received in the pin slots 136 when the dispenser 24 is installed in a front well 139 defined by the bezel 130. A towel dispenser interior 140 can be refilled with towels by pivoting the dispenser forward about the pins. Alternatively, the bezel 130, rear panel 132, and dispenser 24 can be constructed and arranged to leave exposed a refill opening 142 in a rear upper end of the dispenser 24. The refill opening can be exposed either by pivoting the dispenser forward or by removing the unit 28 to expose the opening 142. Towels can then be added to the dispenser through the opening 142 as needed. Towels can be dispensed from the interior 140 through a dispenser access 144 in a lower end of the dispenser 24.

The washer fluid bucket 22 is also carried by the unit 28. In this example, a portion of the bezel well 139 is adapted to receive the bucket 22 therein. FIG. 15 illustrates one of many possible examples for retaining the bucket 22 on the bezel 130. The bucket has side panels 146 with vertically oriented grooves 148 formed therein. The grooves 148 are open at the bottom. Corresponding ribs 150 are provided extending from within the well 139 in the bezel. The bucket 22 is simply lowered into the well 139 with the ribs 150 sliding into the grooves 148.

The disclosed bucket includes a cupped space 152 for storing or holding washer fluid and a window cleaning squeegee. The bucket is open at its top end 154 to permit access to the fluid by the squeegee.

In the illustrated example, the dispenser 24 is positioned above the bucket 22. In this way, gravity will assist in feeding towels downward to the access 144 and the access will be positioned above a ground surface for permitting easy reach to the towels. The fluid and squeegee in the bucket 22 will also be easily accessible and visible for a visual fluid level check because the open top end 154 is facing upward and positioned well below eye level.

As will be evident to those having ordinary skill in the art, the product dispenser unit can be modified to adapt for use with other products. For example, a unit can be attached to a container assembly 20 that has shelves for dispensing items to the consumer, such as motor oil containers.

The modular nature of the container assembly and product system disclosed herein provides many advantages for the retailer and consumer. Flexibility is a

prominent advantage. The disclosed shell 30 has identical recessed regions, side panel configurations, and slots on all four sides. This enables a user to easily decide on which side of the shell 30 to mount a frame 42, to leave blank, or to attach a dispenser unit 28. Thus, the disclosed dispenser unit 28 can include mounting hardware that are similarly structured and correctly positioned in comparison to the frames 42. In this way, the unit 28 can be mounted to any side of the shell as desired.

As shown in FIG. 14, a plurality of tabs 92' and a pair of ears 96' are provided on a portion of the unit 28 on its back side. To install the unit 28, one simply slides the tabs 92' and ears 96' into the tab slots 114 and ear slots 116 of the selected side panel, such as the panel 38a as shown in FIG. 1. Also in this example, the ears 96' are separately attached to the unit, though they can be integrally provided as a part of any portion of the unit as desired. Similarly, the tabs 92' are provided as an integral part of the bezel, though the tabs can be separately attached, or can be provided as part of any other portion of the unit as desired, such as the rear panel 132.

Adding to the modular nature of the product system disclosed herein, in another example, the product dispenser 28 can be mounted directly to a vertically oriented object. In one example, the back panel 132 of the bezel 130 can be adapted to mount to a mounting device carried on a pole (not shown) within the gas station environment. The mounting device can be constructed having complimentary hardware (slots 114 and 116) similar to one of the shell sides, for example, as disclosed herein. The mounting device can also include an extended front face to define a visual media display region for accepting a display sign, as desired.

Alternatively, the back panel 132 can include different or additional mounting hardware devices thereon. For example, FIG. 16 illustrates one of many possible alternatives. The back panel can include female L-shaped brackets 160 each defining a receptor space and protruding from the back panel. Complimentary mounting brackets 164 can include blades 166 that slide into the receptor spaces 162. The brackets 164 can be suspended or hung from any desired vertical surface and mounted by any suitable means. For example, the brackets 164 can be secured to a pole in a gas station environment utilizing straps wrapped around the poles.

As will be evident to those having ordinary skill in the art, the disclosed product system can vary considerably in many ways and yet fall within the spirit and

scope of the invention. For example, the bucket 22 can have a notch cutout or a spout formed in an upper surface adjacent the open top end to receive therein and register a squeegee handle so that the squeegee is held in an upright position for easy access by a user. Further, optional display regions can be provided on either or both of the
5 bucket 22 and the dispenser 24, if desired.

The towel dispenser and/or bucket can be designed to be separately removable from the container assembly 20. Alternatively, the towel dispenser can include a refill access, such as a pivotable front panel, so that it can be refilled without removing the unit, the dispenser from the unit, or pivoting the entire unit. The dispenser can also
10 have a bottom panel that permits release of only a single towel at a time when gripped and pulled by a user. The bottom of the dispenser should prevent a stack of towels from falling out of the dispenser.

The container assembly 20 can be provided with provisions for displaying visual media on only one side, or less than all of its sides. Further, the container
15 assembly can be designed to require a dispensing unit 28 to be mounted to a specific side instead of to any side, as disclosed herein.

As disclosed herein, the cover 32 of the container assembly 20 must be removed to remove the frames 42 from the display regions 26 and to remove or replace sheets 90. However, the cover 32 and the frames 42 can instead be designed
20 to permit frame and /or sheet removal and replacement independent of the cover. Also, the cover can be designed to include an overhang or awning that protects the top edge of the sign and the display region from damage caused by rain and the like.

A base can be provided for the waste container assembly to add stability and protect the container assembly from impact. The container body can also be provided
25 with "reveals" or strength enhancing features such as ribs and the like.

The various parts and components described herein can be manufactured in further separate parts, or with one or more of the various components fabricated integrally with other parts. The product dispenser unit can be formed with an integral towel dispenser and/or an integral bucket and/or an integral bezel, as desired.

30 In another example, the cover 32 can be formed to integrally incorporate one or more of the bucket and the towel dispenser, leaving all four sides of the container assembly for visual media display. This could be utilized to further enhance revenue

streams. The shell of the container assembly can also be formed having integral visual media display regions with features for holding a media formed directly into the shell

5 Either or both of the bucket and towel dispenser can be formed from transparent material. This would permit easy visual inspection for an attendant to determine when the appropriate component must be re-filled with product, as needed.

10 The disclosed waste container assemblies, with or without additional product holders or media display features can be placed in the vicinity of a gas pump for easy access to motorists and other users of the gas station environment. A support for separately mounting one or more product holders on a vertical surface and not the container assembly 20 can also be placed in the same gas pump vicinity for easy access.

15 The display regions can be placed so that they are easily visible to motorists and other users of the gas station environment. The display regions can accommodate easy changeover of display signs for frequent changing of signs and display information. The waste container assembly with display regions can also be used in other, non-gas station environments, such as stores and hypermarkets, as a promotional display and refuse can.

20 Although not required, the concavely curved frame disclosed herein can greatly improve the performance of the disclosed waste container assemblies and/or media display regions. The frames can instead be provided having a relatively planar construction.

25 Other examples of media holders can include providing vertically oriented and spaced apart channels on or as a part of a waste container assembly to guide and hold a display sign. The cover can be utilized to compress resilient vertical channels inward against edges of the media when the cover is installed to securely hold the media in place.

30 The waste container assembly can define a display region bounded on either side by a pair of such vertically oriented channels. For example, a POP sign would slide between the channels and its side edges captured between the channels and a surface of the container assembly. The top of the POP sign could then be captured or caught and clamped to the waste container assembly by the cover which overlaps an

exposed upper edge of the sign. A plurality of ribs could be provided in the cover to bear on the exposed edge to clamp the sign in place.

5 The frame can have flexible flaps on its bottom and side edges. Channels on the container assembly could be utilized to fold the flaps onto edges of the sign when the frame is slid into the channels. The channels then would hold the flaps and sign in place until the frame is removed. The frame can have a handle on its top edge to make insertion and removal easier. A bottom end of each display region and/or frame can be slanted to run off water from inclement weather.

10 A living hinge can connect a bottom flap to the frame within the lower segment. The flap could be constructed to flip over onto the bottom edge of a sign held on the frame. Channels of the container assembly could be utilized to capture and hold the flap pinned against the sign. The flap can have a slight curve to create a compression of the flap when pinched in the channels to further secure the frame and the sign in place on the container assembly.

15 The frame can have a flexible side or track bellows or an accordion pocket. The bellows edges can then compress as they move downward along channels in the container assembly. The bellows edges can have a flange that extends outward deeper into the channel. The sign would be visible between the bellows. Once such a the frame were installed (with or without a sign) and once a sign had been installed, the cover of the container assembly can again be used to snap onto the container assembly and close the upper part of the bellows edges and clamp the sign and frame to the container assembly. A ramp can be provided interior to the cover and exposed from the bottom that engages and clamps the upper parts of the bellows when installed.

25 An alternative example of a two channel configuration can further be accompanied by a bottom horizontal channel. The bottom channel can be hinged to the waste container assembly by one or more integrally molded "living hinges" or by conventional hinges. The sign can be placed in the display area of the container assembly and the frame or cover can be closed against the container assembly. The vertical channels, when the frame is closed, would then clamp the side edges of the sign against the container assembly similar to the above disclosed embodiment.

30 Similarly, the bottom channel would then clamp the bottom edge of the sign against the container assembly.

One disadvantage to use of a living hinge configuration for a frame would be that such hinges typically require use of PP (polypropylene) plastic. However, outdoor waste containers of this type often require a more temperature resistant HDPE (high-density polyethylene) material. This configuration may be more feasible as material improvements develop, or for use in warmer environments.

In another example, the waste container assembly can have a container base or liner with a bottom and enclosed side panels. The side panels can have a necked down region generally near the bottom of the base. A container shell or frame can be fitted over an exterior of part of the base. The shell can have a ring that fits over the bottom of the base and rest against a shoulder at the necked down region. The shell can also have four upstanding frame channel sections that register with the four vertical corners of the base. The frame channel sections can define channels on each of the four side panels of the base, which in turn can define display regions therebetween on each side panel.

The corners of the shell can vary considerably from that shown in the disclosed examples. In one example, edges of the various shell parts, if not a unitary structure as illustrated, can incorporate a so-called tongue and groove engagement. Component sections of a shell can also be formed with a slight curvature to apply a tension when installed over complimentary shaped separate base corner parts. Base corner parts can also be formed with grooves or slots to receive a complimentary finger of the channels sections. The side edges of a sign can be captured between channel sections of the shell and such base corner parts, thus forming channels to hold a sign on each side panel of the base.

In yet another example, the shell can have a separately formed bottom ring and four attachable legs or frame sections. The frame sections can have a tab at the lower end that is received in a corresponding insertion region of the bottom ring. A display sign can also be positioned within a display region of the container assembly between two such legs or channel sections.

In such an example, the cover can be used to secure the shell legs in place at the top ends and to define visual media display regions therebetween. When the cover is removed, the top ends of the four vertical legs can be designed to naturally move outward. The legs can be designed to spring outward when the top is removed

and to be forcibly bent slightly inward and held by the cover when installed. The bottoms of the four legs can be tight up against the waste container panels, and remain stationary, acting as a pivot point. The legs and the base adjacent the legs can thus create vertical channels that are open at the top to receive an edge of a thin plastic POP sheet without any resistance. The vertical legs can be shaped so as to capture the edges of the sheet and bow it inward as the sheet is slid between the leg sections.

As the sheet travels down into these channels, it will encounter greater friction, similar to the disclosed frame tracks discussed above. The increased friction is caused by the vertical legs being closer to the waste container panels, the further downward that the sheet travels. When reaching the bottom of the vertical channels, the bottom edge of the POP sheet can glide into a crescent-shaped pocket, holding the bottom edge in place. The act of closing the waste container cover will cover the tops of the vertical legs. The cover can also be designed to cover the top edge of the sheet to protect it from water and wind. The force of closing the waste container cover can also be transferred to the tops of the vertical legs, drawing them inward and compressing them fully up against the panels of the waste container assembly. The top of the sheet can be captured by the underside of the waste container cover.

Further, in the disclosed example, the refuse opening 34 in the top panel of the cover 32 is exposed. However, a hood can also be received over the cover to protect the refuse opening. Also, the cover can have a simple locking or snap-fit feature that retains it to the waste container assembly. The snap-in detent can provide sensory feedback to the user that the cover is securely in place.

Many different methods, processes, and materials can be used to fabricate the disclosed products and product system. For example, low pressure molding in high density polyethylene (HDPE) can be used to form the waste container assembly shell, insert, and cover, as well as the frames and the parts of the dispenser unit. Variations in structural ribbing and wall thicknesses can be utilized to create optimal stability, strength, and mass to resist wind and impact damage. Injection molding can also be used, especially for the smaller dispensers, buckets, and the like, again using HDPE, if desired. Alternative processes for fabricating the parts can include blow molding, rotational molding, vacuum forming, heat bonding, high-pressure injection molding, roto-molding, along with fiberglass lay-up processes and the like. Substitute

materials, such as polypropylene or other suitable materials can also be used, depending upon the desired properties and intended environments for use.

In high-end retail, office, or other non-gas station environments, metal fabrication could be used for some or all of the parts, if desired. Metal can be easily painted, offering many color and finish options. Components of the disclosed waste containers can also be made using.

The disclosed waste container assembly 20 provide a means for providing consumer products at point of use in conjunction with a refuse collector. It also provides a means to apply POP advertising signs or other visual media to waste containers. The signs can be changed out frequently, as is customary for POP signs. The sign holders and methods disclosed herein are well suited for quick and easy change out, require little effort, and preferably can be performed quickly using only one hand. Because such media is necessarily only temporary, the act of changing it needs to be simply linked with another task already performed on a weekly or daily basis. Thus, the signs can be easily changed when the cover is removed to empty the trash receptacle.

A number of existing patents mentioned above require hinged doors, other more complicated structures, and usually require a clear plastic protective cover. The disclosed containers offer solutions that do not require hinges, doors, or clear plastic protective covers. The disclosed containers also reduce part complexity and hence material and manufacturing cost, thereby lowering costs to the customer. Past designs focus on protecting visual media and advertising signage made from paper. Now approximately 75% of POP signage is made of thin plastic sheet, and does not require protection over it's intended short life-span, which can typically be about one (1) month or less.

The disclosed product system can be designed to include use of common components to create different product system variations, depending upon the need for a particular environment for use. Signs can be interchanged, dispensers and buckets can be interchanged and/or replaced, different waste containers and product holder arrangements can be used and interchanged, and the like, to adapt a system to its intended environment.

Although certain product systems for a gas station environment have been disclosed and described herein in accordance with the teachings of the present invention, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all embodiments of the teachings of the invention fairly falling
5 within the scope of the appended claims, either literally or under the doctrine of equivalents.